

Scanning the Past

Browder J. Thompson

The November 1941 issue of the PROCEEDINGS OF THE IRE (Institute of Radio Engineers) included a paper on secondary-emission electron multipliers by Browder J. Thompson for whom an annual award still presented by the IEEE was later named. At the time of the paper, he worked for the Radio Corporation of America (RCA) in Harrison, New Jersey. The same issue of the PROCEEDINGS contained two other technical papers on electron multipliers by RCA engineers. Television pioneer, Philo T. Farnsworth, patented an electron multiplier in 1934 and used it in his image-dissector camera tube. RCA engineers investigated television and other applications of electron multiplication during the 1930's. One application introduced during World War II employed an electron multiplier tube as a noise source for electronic countermeasures transmitters.

In his 1941 paper, Thompson discussed the use of electron multiplication in a grid-controlled vacuum-tube amplifier. He suggested that such a tube might be used to advantage in ultrahigh-frequency applications where input capacitance was a serious problem. His analysis indicated that the use of electron multiplication could reduce input capacitance substantially. He noted that the signal-to-noise ratio was not improved compared to more conventional tubes. In a subsequent paper published in 1943, Thompson commented that "vacuum-tube design is a subject which has intrigued many workers, largely one may suspect, because it has presented many possibilities for ingenious methods of analysis."

Thompson was born in the small town of Roanoke, Louisiana, in 1904 and received a B.S. degree in electrical engineering from the University of Washington in 1925. From 1926 to 1931, he worked on the design and development of vacuum tubes at the General Electric Research Laboratory. He moved to RCA in 1931, where he

participated in the development of miniature vacuum tubes suitable for high-frequency applications. The commercial version of these tubes became commonly known as "acorn tubes" because of their physical resemblance to acorns. The significance of this work was recognized when Thompson received the Morris Liebmann Prize from the IRE in 1936. He became a member of the IRE Board of Directors in 1937 and a Fellow of the IRE in 1938. He was named the associate director of research at RCA's laboratory in Princeton, New Jersey, in 1942.

Late in 1943, Edward Bowles recruited Thompson to become a special consultant to the Secretary of War. Thompson was assigned to supervise a special secret project and insisted that he be permitted to be an observer on an aerial mission in the theater of combat to gain firsthand understanding of the problem. Tragically, he was killed when his plane crashed in enemy territory in early July 1944. Friends and former colleagues established an endowment fund to support the Browder J. Thompson Memorial Prize Award, given to an author or authors under the age of 30 of an outstanding IRE paper. The award first was given by the IRE in 1946 and has continued as an IEEE award to the present. A list of the recipients through 1991 may be found in the current IEEE Membership Directory. A PROCEEDINGS paper has won this award many times, including the 1991 award given to K. K. Parhi for his paper "Algorithm Transformation Techniques for Coherent Processors" in the December 1989 issue.

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